



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/936,675
Filing Date: March 13, 2002
Applicant: Jeremy Barker
Group Art Unit: 1745
Examiner: C. Chaney
Title: Lithium-Containing Phosphate Active Materials
Attorney Docket: 4858-000080/USB

E.L.G. 10/24/02
PATENT
#6
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Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS, AND OTHER INFORMATION

The patents, publications and other information submitted for consideration by the Office (except unpublished U.S. patent applications) are listed on Form 1449 attached hereto.

II. COPIES

A. X Submitted herewith is a legible copy of (i) each U.S. patent application publication and U.S. and foreign patent; (ii) each publication or that portion which caused it to be listed; (iii) for each cited pending U.S. application, the application specification including the claims, and any drawing of the application which caused it to be listed including the claims directed to that portion; and (iv) all other information or that portion which caused it to be listed.

B. X Any patents, publications or other information which are listed on Form 1449 or on the copies of PTO-892, but which are not enclosed herewith, were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Serial Number
09/274,371 issue as 6,153,333

U.S. Filing Date
March 23, 1999

C. X This is a PCT application in the entry of the National Phase in the United States. A copy of the International Search Report is attached for the Examiner's information. The documents listed on the International Search Report are listed on the attached Form-1449 for consideration by the Examiner and for listing on any patent resulting from this application. Since the International Search Report was from the US, EPO, or JPO search authorities, copies of these references should have been supplied to the USPTO under the trilateral agreement and are believed to be in the file of the above-identified application. (MPEP 1893.03(g))

III. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

A. Except as may be indicated below in (B), all of the patents, publications or other information are in the English language (concise explanation not required).

B. X A concise explanation of the relevance of each patent, publication or other information listed that is not in the English language is as follows (see 37 C.F.R. § 1.98(a)(3)):

1. See the attached foreign patent office communication from a counterpart foreign application:

2. X English translations are provided for: EP 1 049 182; EP 1 093 172;
EP 0 680 106

3. X Other: Abstracts provided for: JP61 263069; JP-251764;
A. Nadiri et al; Genkina et al;
and Genkina et al.

C. The following additional information is provided for the Examiner's consideration.

IV. CROSS REFERENCE TO RELATED APPLICATION(S)

A. The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this(these) application(s) to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. § 122.

Serial No.

Filing Date

Art Unit

V. THIS IDS IS BEING FILED UNDER

A. X 37 C.F.R. § 1.97(b): (check only one box)

1. within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. § 1.97(b)(1)). No fee or certification is required.

2. ___ within three months of the date of entry of the national stage as set forth in §1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or certification is required.

3. X before the mailing of a first Office Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or certification is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the certification under 37 C.F.R. § 1.97(e) below; or, if no certification has been made, charge our deposit account a fee in the amount of \$180.00 as required by 37 C.F.R. § 1.17(p).

4. ___ before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No fee or certification is required.

B. ___ 37 C.F.R. § 1.97(c): (check only one box)

- before the mailing date of either any Final Office Action under 37 C.F.R. § 1.113, a Notice of Allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution.

1. ___ No certification; therefore, a fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

2. ___ See the certification below. No fee is required.

C. ___ 37 C.F.R. § 1.97(d):

- after the mailing date of either a Final Office Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311, yet on or before payment of the issue fee.

1. ___ See the certification below. A fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

VI. CERTIFICATION UNDER 37 C.F.R. § 1.97(e): (check only one box)

The undersigned hereby certifies that:

A. ___ each item of information contained in this IDS was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(1)). See further statement under 37 C.F.R. § 1.704(d) below in section VII, if applicable; or

B. ☐ no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(2)).

C. ☐ Some of the items of information were first cited in a communication from a foreign patent office. As to this information, the undersigned hereby certifies that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS.

VII. STATEMENT UNDER 37 CFR 1.704(d)

The undersigned hereby states that:

☐ each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. 1.56(c) more than thirty days prior to the filing of this IDS.

VIII. PAYMENT OF FEES (check only one box)

A. ☐ A check in the amount of \$180.00 is enclosed for the above-identified fee.

B. ☐ Please charge Deposit Account No. 22-0100 in the amount of \$180.00 for the above-indicated fee. A duplicate copy of this paper is attached.

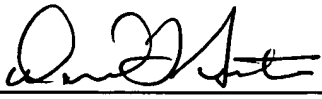
The above references are being cited only in the interest of candor and without any admission that they constitute statutory prior art, contain matter which anticipates the invention, or which would render the same obvious, either singly or in combination, to a person of ordinary skill in the art. Furthermore, this Information Disclosure Statement shall not be construed as a representation that a search has been made.

If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 22-0100.

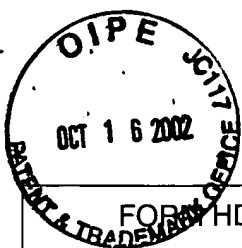
Please charge any additional fees or credit any overpayment pursuant to 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 22-0100.

Respectfully submitted,

Dated: 10 October 2002

By: 
David L. Suter
Reg. No. 30,692

HARNESS, DICKEY & PIERCE, P.L.C.
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FORM HDP-1449 (Based on Form PTO-1449)

PATENT AND TRADEMARK OFFICE
INFORMATION DISCLOSURE CITATION
(Use several sheets if necessary)

Sheet 1 of 5

ATTORNEY DOCKET NO.

SERIAL NO.

4858-000080 USB

09/936,675

APPLICANT

Jeremy Barker

FILING DATE

GROUP

3/13/2002

1745

U.S. PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
1.		3,736,184	5/29/73	Dey et al.		
2.		4,009,092	2/22/77	Taylor		
3.		4,049,891	9/20/77	Hong et al		
4.		4,098,687	7/4/78	Yang		
5.		4,166,159	8/28/79	Pober		
6.		4,194,062	3/18/80	Carides et al.		
7.		4,322,485	3/30/82	Harrison et al.		
8.		4,394,280	7/19/83	von Alpen et al.		
9.		4,464,447	8/7/84	Lazzari et al.		
10.		4,465,744	8/14/84	Susman et al.		
11.		4,477,541	10/16/84	Fraioli		
12.		4,512,905	4/23/85	Clearfield et al.		
13.		4,668,595	5/26/87	Yoshino et al.		
14.		4,707,422	11/17/87	de Neufville et al.		
15.		4,792,504	12/20/88	Schwab et al.		
16.		4,828,834	5/9/89	Nagaura et al.		
17.		4,830,939	5/16/89	Lee et al.		
18.		4,935,317	6/19/90	Fauteux et al.		
19.		4,985,317	1/15/91	Adachi et al.		
20.		4,990,413	2/5/91	Lee et al.		
21.		5,037,712	8/6/91	Shackle et al.		

Examiner:

Date Considered:

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

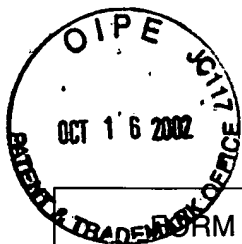
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	4858-000080 USB		09/936,970
	APPLICANT		
	Jeremy Barker		
	FILING DATE	GROUP	
	3/13/2002	1745	

U.S. PATENT DOCUMENTS						
Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
22.		5,130,211	7/14/92	Wilkinson et al.		
23.		5,232,794	8/3/93	Krumpelt et al.		
24.		5,262,253	11/16/93	Golovin		
25.		5,300,373	4/5/94	Shackle		
26.		5,336,572	8/9/94	Koksbang		
27.		5,399,447	3/21/95	Chaloner-Gill et al.		
28.		5,411,820	5/2/95	Chaloner-Gill		
29.		5,418,090	5/23/95	Koksbang et al.		
30.		5,418,091	5/23/95	Gozdz et al.		
31.		5,425,932	6/20/95	Tarascon		
32.		5,435,054	7/25/95	Tonder et al.		
33.		5,456,000	10/10/95	Gozdz et al.		
34.		5,460,904	10/24/95	Gozdz et al.		
35.		5,463,179	10/31/95	Chaloner-Gill et al.		
36.		5,482,795	1/9/96	Chaloner-Gill		
37.		5,514,490	5/7/96	Chen et al.		
38.		5,540,741	7/30/96	Gozdz et al.		
39.		5,580,430	12/3/96	Balagopal et al.		
40.		5,643,695	7/1/97	Barker et al.		
41.		5,674,645	10/7/97	Amatucci et al.		

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Sheet 3 of 5

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U.S. PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
42.		5,702,995	12/30/97	Fu		
43.		5,910,382	6/8/99	Goodenough et al.		
44.		6,004,697	12/21/99	Thackeray et al.		
45.		6,153,333	11/28/00	Barker		

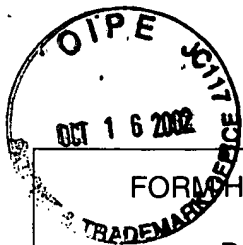
FOREIGN PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Country	Class/ Subclass	Translation Yes	No
1.		EP 1 049 182	11/2/00	Europe		X	
2.		EP 1 093 172	4/18/01	Europe		X	
3.		EP 0 680 106	11/2/95	Europe		X	
4.		WO 00/01024	1/6/00	WIPO			
5.		WO 98/12761	3/26/98	WIPO			
6.		WO 99/30378	6/17/99	WIPO			
7.		WO 00/57505	9/28/00	WIPO			
8.		JP 61-263069	11/21/86	Japan		Abstract	
9.		JP 6-251764	9/9/94	Japan		Abstract	

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APPLICANT

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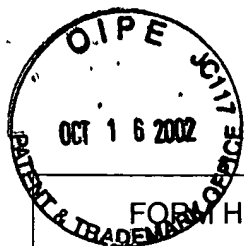
OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

Ref. Desig.	Examiner's Initials	
1.		A. B. Bykov et al., Superionic Conductors $\text{Li}_3\text{M}_2(\text{PO}_4)_3$ ($\text{M}=\text{Fe}, \text{Sc}, \text{Cr}$): Synthesis, Structure and Electrophysical Properties, Solid State Ionics 38 (1990) 31-52.
2.		Rangan et al., New Titanium-Vanadium Phosphates of Nasicon and Langbeinite Structures, and Differences between the Two Structures Toward Deintercalation of Alkali Metal, Journal of Solid State Chemistry 109, 116-121 (1994).
3.		Kirkby et al, Crystal Structure of Potassium Aluminum Fluoride Phosphate, KAIFPO_4 , Department of Chemistry, University of Toronto, Toronto, Ontario, Canada, M5S 1A1.
4.		J. Arlt et al., $\text{Na}_5\text{AlF}_2(\text{PO}_4)_2$: Darstellung, Kristallstruktur und Ionenleitfähigkeit, Z. anorg. allg. Chem. 547 (1987) 179-187.
5.		P G Nagorny et al., Preparation and Structure of the New Fluoride Phosphate $\text{Na}_5\text{CrF}_2(\text{PO}_4)_2$, Russian Journal of Inorganic Chemistry 35 (4) 1990.
6.		Loiseau et al., $\text{NH}_4\text{FePO}_4\text{F}$: Structural Study and Magnetic Properties, Journal of Solid State Chemistry III, 390-396 (1994).
7.		LeMeins et al., Phase Transitions in the $\text{Na}_3\text{M}_2(\text{PO}_4)_2\text{F}_3$ Family ($\text{M}=\text{Al}^{3+}, \text{V}^{3+}, \text{Cr}^{3+}, \text{Fe}^{3+}, \text{Ga}^{3+}$): Synthesis, Thermal, Structural, and Magnetic Studies, Journal of Solid State Chemistry 148, 260-277 (1999).
8.		Yakubovich et al., Inorganic Compounds: The Mixed Anionic Framework in the Structure of $\text{Na}_2\{\text{MnF}[\text{PO}_4]\}$, Acta Cryst. (1997) C53, 395-397.
9.		Moss et al., On the X-ray Identification of Amblygonite and Montebrasite, Mineralogical Magazine, September 1969, vol. 37, No. 287.
10.		LeMeins et al., Ionic Conductivity of Crystalline and Amorphous $\text{Na}_3\text{Al}_2(\text{PO}_4)_2\text{F}_3$, Solid State Ionics III (1998) 67-75.
11.		M. Dutreilh et al., Synthesis and Crystal Structure of a New Lithium Nickel Fluorophosphate $\text{Li}_2[\text{NiF}(\text{PO}_4)]$ With an Ordered Mixed Anionic Framework, Journal of Solid State Chemistry 142, 1-5 (1999).
12.		Manthiram et al., Lithium Insertion Into $\text{Fe}_2(\text{SO}_4)_3$ Frameworks, Journal of Power Sources, 26 (1989) 403-408.
13.		Amblygonite Mineral Data; http://webmineral.com/data/Amblygonite.shtml .

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Date Considered:

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SERIAL NO.

09/936,675

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1745

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

Ref. Desig.	Examiner's Initials	
14.		Lacroixite Mineral Data, http://webmineral.com/data/Lacroixite.shtml
15.		Montebrasite Mineral Data, http://webmineral.com/data/Montebrasite.shtml
16.		Tavorite Mineral Data, http://webmineral.com/data/Tavorite.shtml
17.		A. Nadiri et al., Lithium Intercalation in Lithium Titanium Phosphate, C. R. Acad. Sci., Ser. 2 (1987), 304 (9), 415-18 (Abstract Provided).
18.		Genkina et al., Phase Formation and Crystallochemistry of Iron Phosphates Formed Under Hydrothermal Conditions, Izv. Akad. Nauk SSSR, Neorg. Mater. (1988), 24 (7), 1158-62 (Abstract Only).
19.		Genkina et al., Crystal Structure of Synthetic Tavorite (LiFe[PO ₄] (OH,F)), Kristallografiya (1984), 29 (1), 50-5 (Abstract Only).
20.		International Search Report, PCT/US01/08132
21.		Mt. Averbuch-Pouchot et al., "Topics in Phosphate Chemistry", World Scientific 1996.
22.		J. Gopalakrishnan et al., V ₂ (PO ₄) ₃ : A Novel NASICON-Type Vanadium Phosphate Synthesized by Oxidative Deintercalation of Sodium from Na ₃ V ₂ (PO ₄) ₃ , Chem. Mater., Vol. 4, No. 4, 1992, p. 745-747.
23.		International Search Report, PCT/US00/04401 (attached to WO 00/57505)

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